

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Donal S. Dunbar

Serial No.: 10/848,986

Filed: May 19, 2004

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Group Art Unit: 3746

Examiner: William Rodriguez

For: RETRACTABLE AFTERBURNER FOR A JET ENGINE

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Date: October 17, 2006

Name: Michael L. Diaz

Signature: 

**AMENDMENT UNDER 37 C.F.R. § 1.111**

Sir:

Responsive to the Office Action, reconsideration of the action and allowance of the present application are respectfully requested and are believed to be appropriate in view of the following amendments and remarks:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Amendments to the Drawings** begin on page 6 and includes 9 attached replacement sheets.

**Remarks/Arguments** begin on page 7 of this paper.

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (Currently Amended): A jet propulsion system for use on an aircraft, said jet propulsion system comprising:

a jet engine producing thrust for the aircraft, said jet engine emitting an exhaust;

a storage tank holding an oxidizing material; and

an afterburner shroud conforming to an outer surface of said jet engine, wherein said afterburner shroud is retractable from a forward position when not in use to a rearward position during use of said afterburner shroud; and

means for mixing the oxidizing material and fuel into a combustible mixture;

said afterburner shroud injecting the combustible mixture into the exhaust, whereby the exhaust ignites the mixture, thereby creating an additional thrust for said jet engine.

Claim 2 (Original): The jet propulsion system of claim 1, wherein said jet engine is a turbojet engine.

Claim 3 (Original): The jet propulsion system of claim 1, wherein said jet engine is a turbofan engine.

Claim 4 (Original): The jet propulsion system of claim 1 wherein the oxidizing material is liquid oxygen.

Claim 5 (Canceled)

Claim 6 (Currently Amended): The jet propulsion system of ~~claim 5~~ claim 1 wherein said afterburner shroud extends beyond an exhaust end of the jet engine during operation of the afterburner shroud.

Claim 7 (Currently Amended): The jet propulsion system of ~~claim 5~~ claim 1 wherein said afterburner shroud is attached to said jet engine by a plurality of moveable support arms.

Claim 8 (Original): The jet propulsion system of claim 7 wherein the support arms are pivotable.

Claim 9 (Original): The jet propulsion system of claim 7 wherein the support arms are conduits providing passage of the oxidizing material and fuel to said afterburner shroud.

Claim 10 (Original): The jet propulsion system of claim 1 wherein said means for mixing is a mixing ring circumferentially aligned within said afterburner shroud.

Claim 11 (Original): The jet propulsion system of claim 10 wherein the mixing ring includes a plurality of injectors for injecting fuel and the oxidizing material into the exhaust of said jet engine.

Claim 12 (Original): The jet propulsion system of claim 10 wherein:  
said afterburner shroud is affixed to said jet engine by a plurality of support arms; and  
the plurality of support arms feed fuel and the oxidizing material to the mixing ring.

Claim 13 (Original): The jet propulsion system of claim 1 wherein the storage tank conforms to at least a portion of an outer surface of the jet engine.

Claim 14 (Currently Amended): An afterburner shroud for use on a jet engine, said afterburner shroud comprising:

a shroud circumferential shaped and positioned over a portion of the jet engine;

means for mixing ~~a oxidizing~~ an oxidizing material and fuel to form a combustible mixture material, wherein said shroud is affixed to a portion of an outer surface of the jet engine by a plurality of support arms; and

injecting means for injecting the combustible material into the exhaust created by the jet engine;

whereby the combustible material is ignited by the exhaust and provides an additional thrust to the jet engine.

Claim 15 (Canceled)

Claim 16 (Currently Amended): The afterburner shroud of ~~claim 15~~ claim 14 wherein the shroud is retractable and the support arms move to extend the shroud rearward toward the exhaust during operation of the afterburner shroud.

Claim 17 (Original): The afterburner shroud of claim 14 wherein the mixing means is a mixing ring circumferentially aligned within the shroud.

Claim 18 (Original): The afterburner shroud of claim 17 wherein the injecting means is a plurality of injectors attached to the mixing ring.

Claim 19 (Original): The afterburner shroud of claim 14 wherein the oxidizing material is liquid oxygen.

Claim 20 (Original): A jet propulsion system for use on an aircraft, said jet propulsion system comprising:

- a jet engine producing thrust for the aircraft, the jet engine emitting an exhaust;

- a storage tank conforming to a portion of an outer surface of said jet engine, said storage tank holding liquid oxygen;

- an afterburner shroud conforming to an outer surface of said jet engine, said afterburner shroud being affixed by a plurality of moveable support arms and wherein said afterburner shroud is retractable, said afterburner shroud being extended rearward toward the exhaust of the jet engine during operation of the afterburner shroud; and

- a mixing ring positioned within said afterburner shroud for mixing the liquid oxygen and fuel into a combustible mixture;

- said afterburner injecting the combustible mixture into the exhaust, whereby the exhaust ignites the mixture, thereby creating an additional thrust for said jet engine.

Amendments to the Drawings:

The attached sheet of drawings includes replacement sheets for FIGs. 1-11. No new matter has been added.

Attachments: 9 replacement sheets

**REMARKS/ARGUMENTS**

Favorable reconsideration of the above-identified patent application, in light of the above amendments and the following remarks is respectfully requested. Claims 1, 6, 7, 14, and 16 have been amended. Claims 5 and 15 have been canceled. The presently pending claims are claims 1-4, 6-14, and 16-20.

In paragraph 1 of the Office Action, the Examiner objected to claim 14 because of informalities. In response, claim 14 has been amended to correct the informalities. Therefore, the withdrawal of the objection and the allowance of claim 14 is respectfully requested.

In paragraph 2 of the Office Action, The Examiner stated that corrected drawings in compliance with 37 CFR 1.121(d) are required. In response, the Applicant is submitting formalized drawings in compliance with 37 CFR 1.121(d).

In paragraphs 3 and 4 of the Office Action, the Examiner under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner stated that claim 14 recites the limitation of "the combustible material" which lacks antecedent basis. In response, the Applicant has amended claim 14 to overcome the rejection. Therefore, the withdrawal of the rejection and the allowance of claims 14-19 is respectfully requested.

In paragraphs 5 and 6 of the Office Action, the Examiner rejected claims 1, 2, and 14 under 35 U.S.C. 102(b) as being anticipated by Suzuki (U.S. Patent No. 4,551,971). In the Office Action,

the Examiner stated that claims 5 and 15 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, and include all of the limitations of the base claim and any intervening claims. In response, the Applicant has amended claim 1 to incorporate the limitations of claim 5. Additionally, the Applicant has amended claim 14 to incorporate the limitations of claim 15. Claim 2 depends from amended independent claim 1 and recites additional limitations in combination with the novel elements of claim 1. Therefore, the withdrawal of the rejection and the allowance of claims 1, 2, and 14 is respectfully requested.

In paragraph 7 of the Office Action, the Examiner rejected claims 1, 2, and 14 under 35 U.S.C. 102(b) as being anticipated by Roche (U.S. Patent No. 5,297,391). In the Office Action, the Examiner stated that claims 5 and 15 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, and include all of the limitations of the base claim and any intervening claims. In response, the Applicant has amended claim 1 to incorporate the limitations of claim 5. Additionally, the Applicant has amended claim 14 to incorporate the limitations of claim 15. Claim 2 depends from amended independent claim 1 and recites additional limitations in combination with the novel elements of claim 1. Therefore, the withdrawal of the rejection and the allowance of claims 1, 2, and 14 is respectfully requested.

In paragraph 8, the Examiner allowed claim 20. The Applicant gratefully acknowledges the allowance of claim 20.

In paragraph 9, the Examiner stated that claims 3-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten independent form including all of the



limitations of the base claim and any intervening claims. In response, the Applicant has amended claim 1 to incorporate the limitations of claim 5 into claim 1. Claim 5 has been canceled. Claims 2-4 and 6-13 depend from amended independent claim 1 and recites additional limitations in combination with the novel elements of claim 1. Therefore, the allowance of claims 1-4 and 6-13 is respectfully requested.

In paragraph 10, the Examiner stated that claims 15-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejection under U.S.C. 112 and include all of the limitations of the base claim and any intervening claims. In response, the Applicant has amended claim 14 to incorporate the limitations of claim 15 into claim 14. Claim 15 has been canceled. Claims 16-19 depend from amended independent claim 14 and recites additional limitations in combination with the novel elements of claim 14. Therefore, the allowance of claims 14, 16-19 is respectfully requested.

CONCLUSION

For all the above reasons, the Applicant respectfully requests the reconsideration and withdrawal of the rejection and the allowance of claims 1-4, 6-14, 16-20.

Respectfully submitted,



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